



The Center for the Advancement of Science in Space

*Manager of the International Space  
Station U.S. National Laboratory*

*Greg Johnson  
President & Executive Director  
12.10.2014*

# AGENDA OVERVIEW



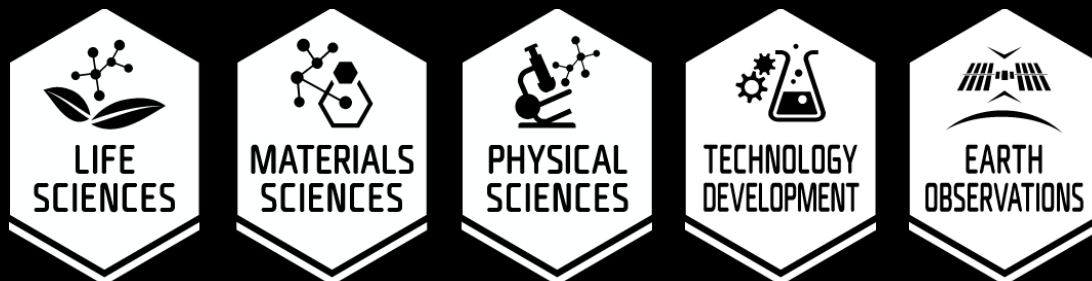
- ▲ Intro to the ISS National Lab and CASIS
- ▲ Timeline of Developments (2011 – 2014)
- ▲ CASIS Go-to-Market Approach
- ▲ Commercial Opportunity
- ▲ Commercial Barriers
- ▲ Open Discussion

# CASIS AND THE ISS NATIONAL LAB



Provide **Opportunity** for research & discovery targeted to a definitive  
**Impact on Earth**

The Opportunities are Wide-Ranging:



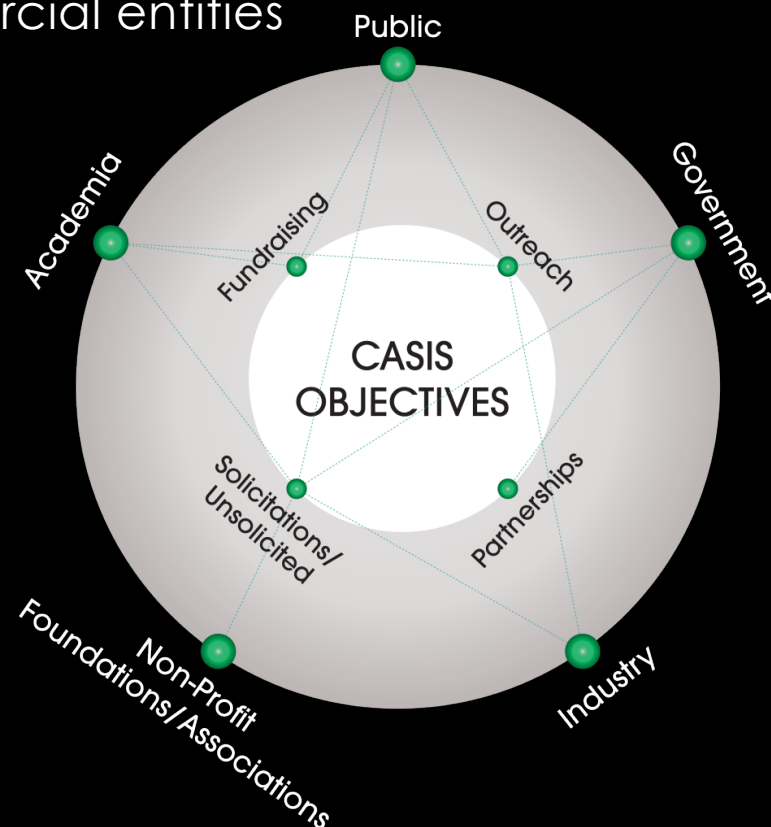
## IMPROVE LIFE ON

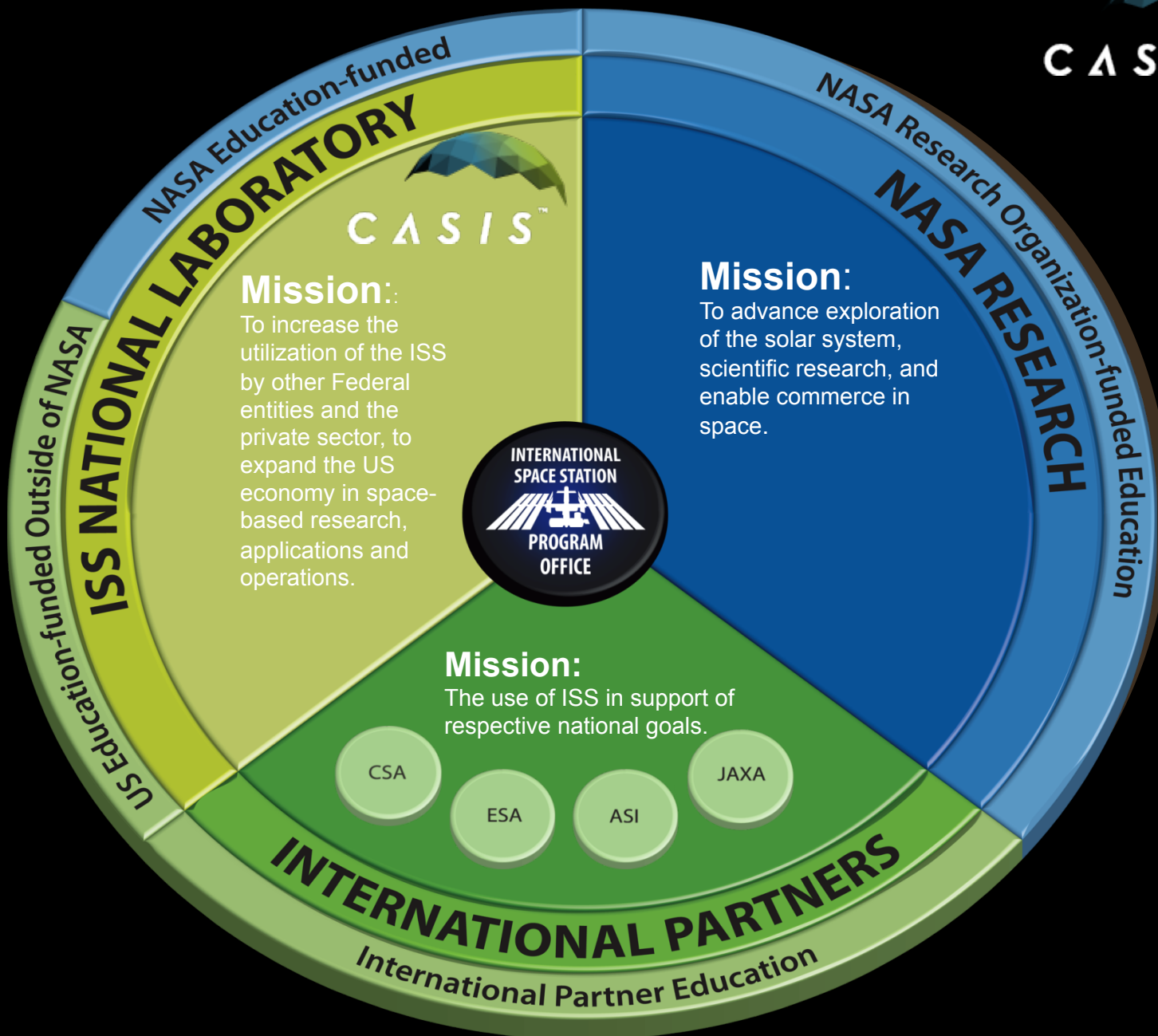


# CASIS OVERVIEW

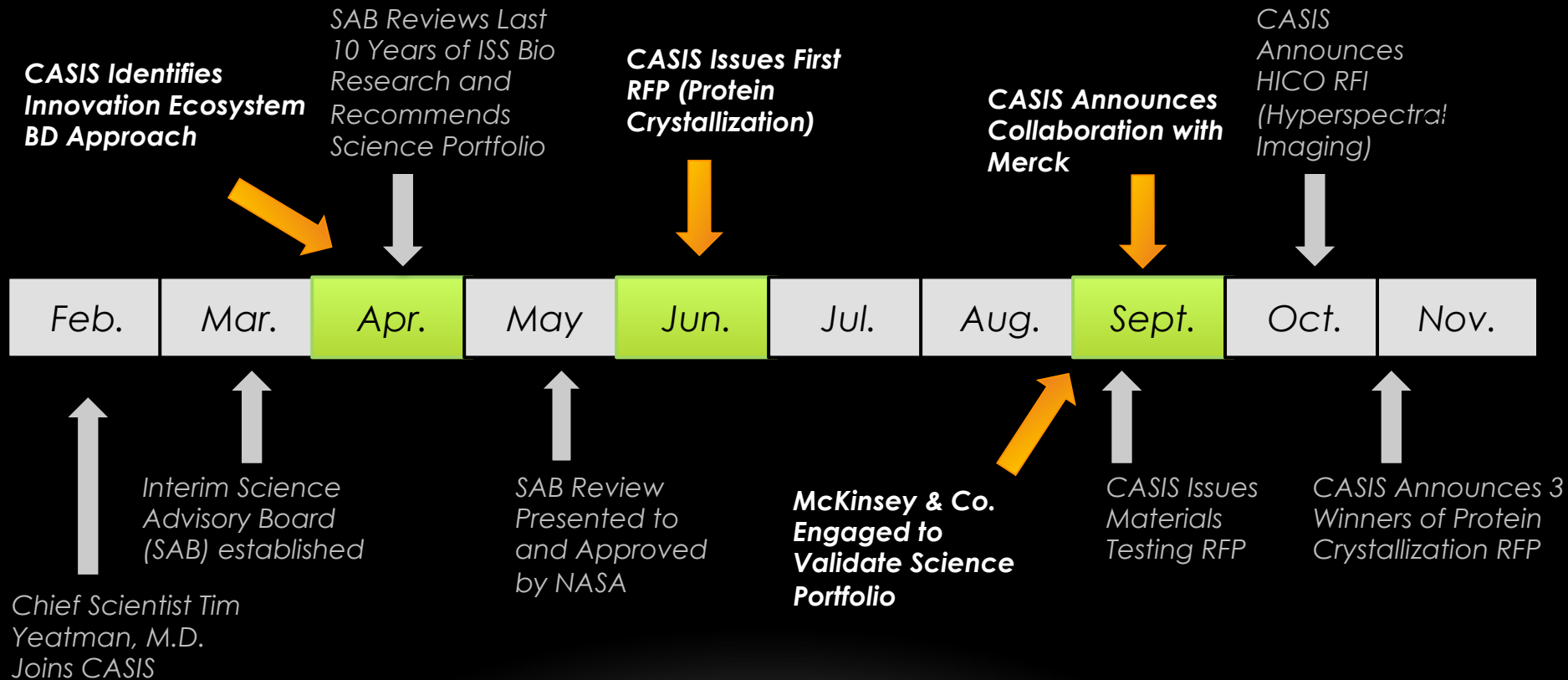


- ▲ Nongovernment nonprofit organization, established to:
  - Develop & manage a diverse R&D portfolio
  - Stimulate & manage the use of ISS by OGAs, academic institutions, and commercial entities
  - Communicate the value of the ISS
    - Including STEM education
- ▲ \$15M annually from NASA, ability to generate other sources of revenue
- ▲ NASA provides transportation and on-orbit logistics

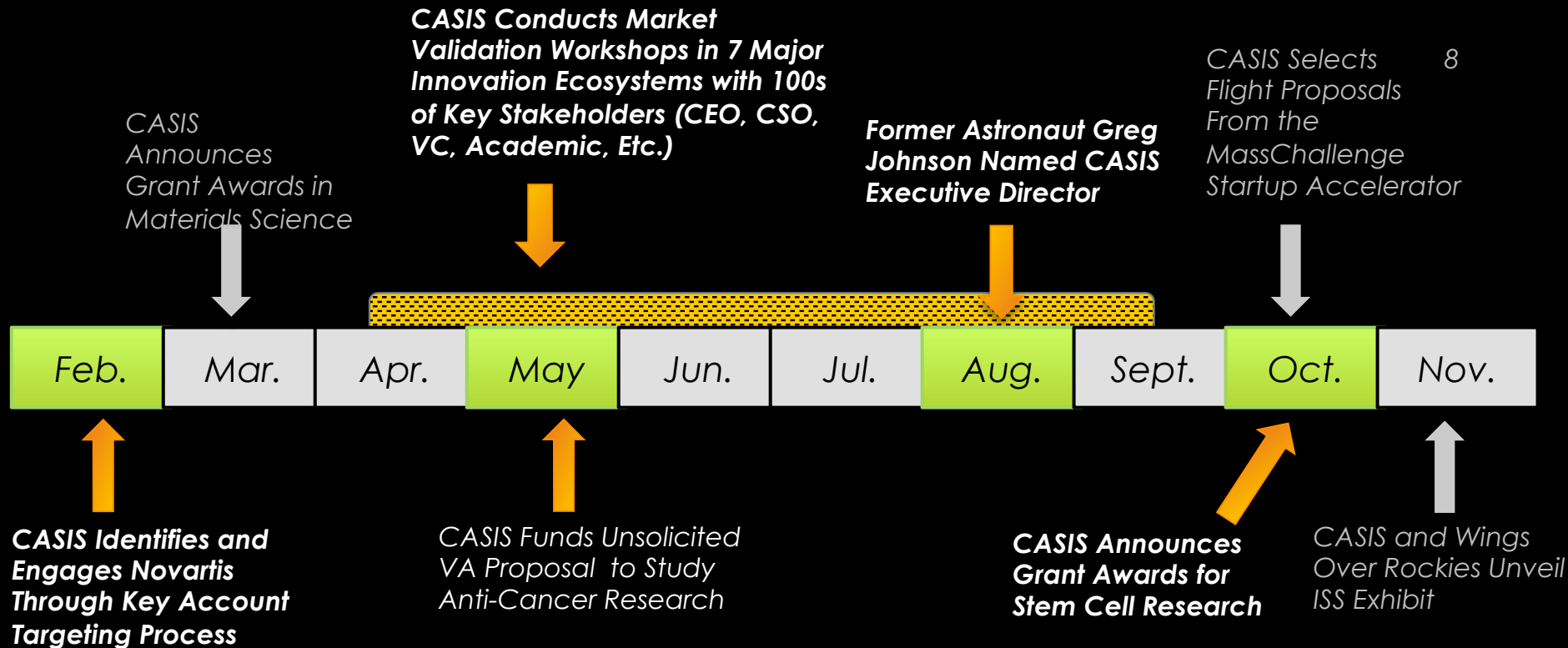




# CASIS TIMELINE 2012



# CASIS TIMELINE 2013



# CASIS TIMELINE 2014



**Orbital 1 Delivers  
First CASIS-  
sponsored  
Payloads to ISS**



CASIS Releases  
Materials Science  
RFP



**CASIS Featured  
on Bloomberg TV**



CASIS Announces  
Collaboration with  
National  
Geographic



CASIS  
Announces  
Enabling  
Technology  
RFP Awards



Jan.

Feb.

Mar.

Apr.

May

Jun.

Jul.

Aug.

Sept.

Oct.

Business Development  
Ecosystem Penetration and  
Key Account Development



CASIS Featured  
in Fast Company



**SpaceX 3  
launches with 6  
PCG experiments  
– CASIS 1<sup>st</sup> RFP**



**CASIS First Scientific  
Research Returns –  
Less than 2 Years  
from RFP Release**



CASIS Launches  
Bone Densitomer,  
3D Printer &  
Novartis Rodent  
Research on  
SpaceX4



# CASIS COMMERCIAL UTILIZATION



*Also in proposal development with Cargill, John Deere, ADM, Dow, and J&J*

# **CASIS GO-TO-MARKET:**

**ACCELERATE FLIGHT PROJECTS THAT BENEFIT EARTH**



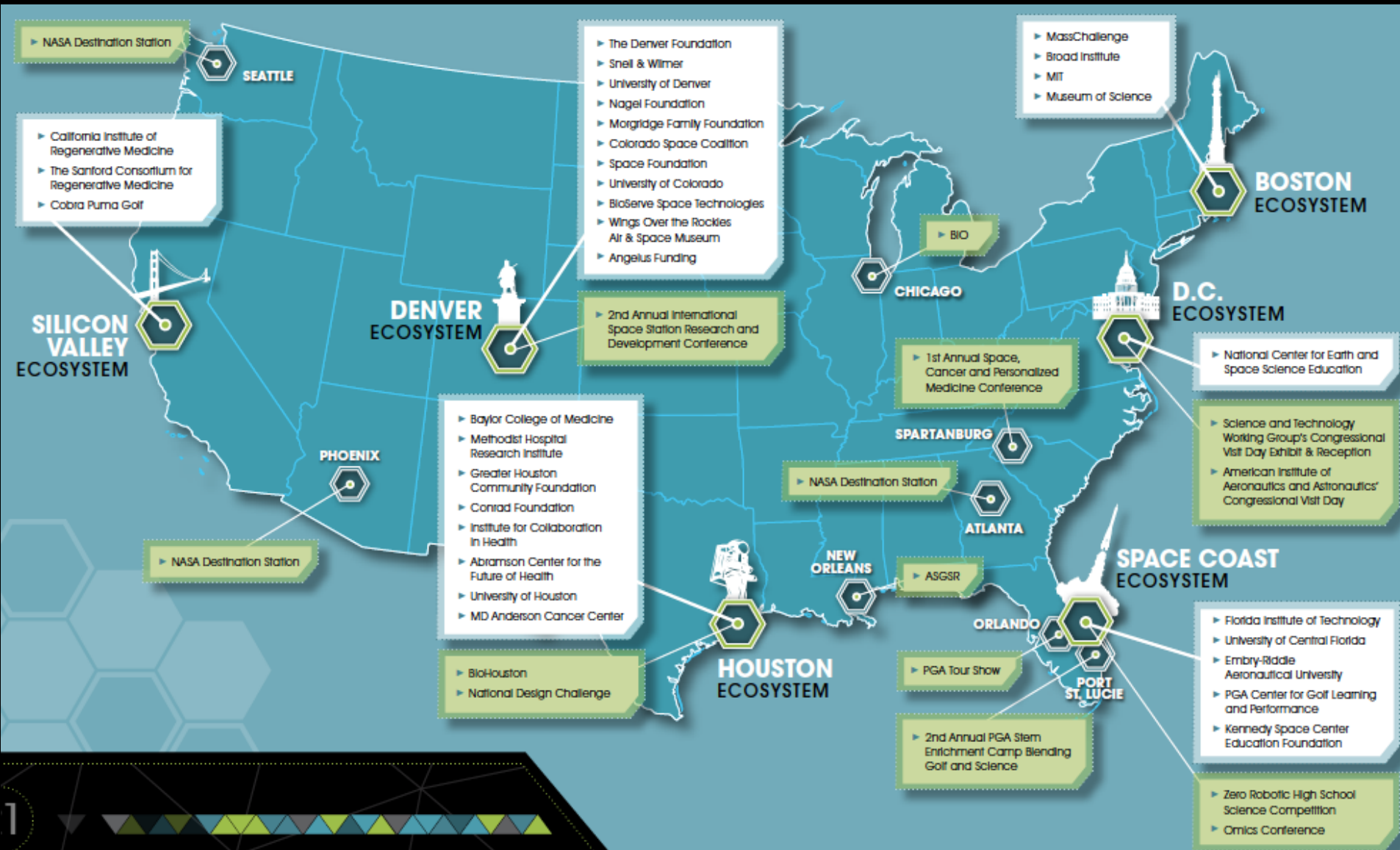
## **▲ Academic Entities (Via Solicited Proposals)**

- Based upon decades of NASA research, market validated and guided by Science & Technology Advisory Panel
- Seed areas of opportunity as proving ground for highly promising research
- Agile review process streamlined and built on best practices

## **▲ Commercial Entities (Via Unsolicited Proposals)**

- Geographic Innovation Ecosystem/Sector Approach
  - Boston, Denver, Silicon Valley, San Diego, Houston, Florida (Space Coast), Washington, DC
- Key Account Strategy
- High-Touch; Solution Selling
- Focused on Customer Journey from awareness to flight opportunity
- Accelerators (MassChallenge, Rice Alliance)

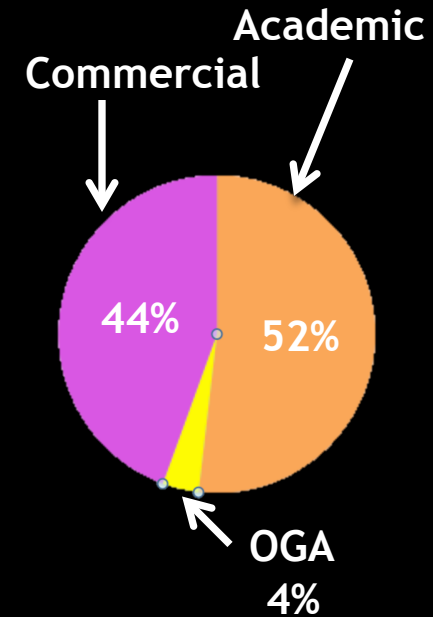
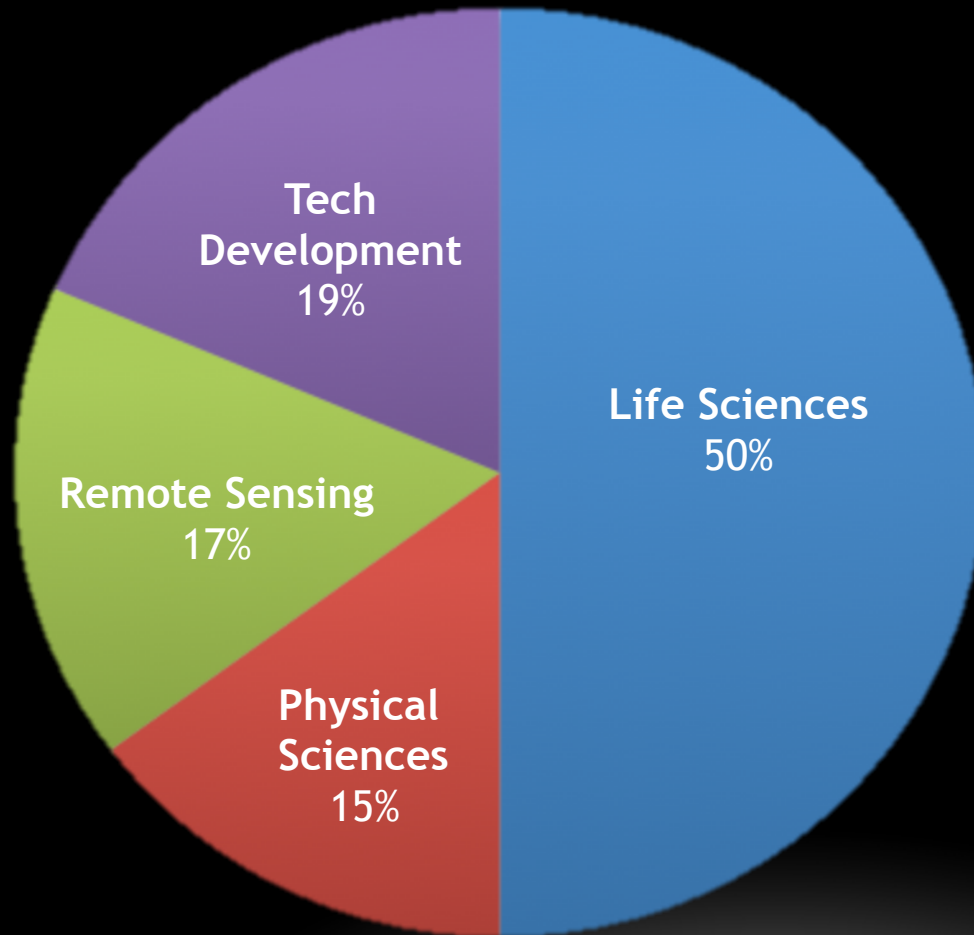
# CASIS ECOSYSTEM DEVELOPMENT



# CASIS CUSTOMER JOURNEY



# CURRENT PROJECT PORTFOLIO\*



FY 2015 Focused Campaigns

- Good Earth
- Good Health

\*Excludes education projects

# ***“HOMERUN” POTENTIAL:*** ***SUCCESS DEMONSTRATES VALUE OF LEO***



- ▲ Drug development and delivery
  - Cancer, Huntington's, Cystic Fibrosis, Parkinson's, heart disease, diabetes...
- ▲ Increased shelf life of commercial products
- ▲ Better performance of sports equipment
- ▲ Lower corrosion in oil and gas lines
- ▲ More efficient solar cells
- ▲ Improved satellite capabilities
- ▲ Improved small payload return capabilities

# COMMERCIAL INDUSTRY BARRIERS



- ▲ **Time** – Too long to manifested flight, too long until next opportunity
- ▲ **Reliability / Predictability** – Transportation primarily and lack thereof
- ▲ **Hardware / Facilities** – Are not similar in capability or familiar to customer
  - **Remote operation** – Either with or without crew time is unknown paradigm
- ▲ **Cost** – Commercial acceptance of paying implementation partner and/or MI & O cost

# RECOMMENDATIONS:

## ADVANCE PATHWAY TO LEO COMMERCIALIZATION



- ▲ Extend ISS commitment to 2028
- ▲ Provide more seed funding for early-stage companies involved in LEO commercialization (through ISS National Lab)
  - Up-mass/down-mass, grant opportunities, business development, awareness
- ▲ Stronger protection of intellectual property
- ▲ Focus NASA investment on multi-use hardware that is informed by the market
  - Leverage common laboratory models for user adoption/support



***OPEN DISCUSSION***

[www.iss-casis.org](http://www.iss-casis.org)

*Twitter: @iss\_casis*